

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A method of reducing wear in a cutting head of a tunnel boring machine, by ~~means of the addition~~ adding at the cutting head of a foamed aqueous liquid composition, which comprises a foaming agent and a lubricant, the lubricant being selected from the group consisting of high molecular weight polyethylene oxides and bentonite.
2. (Currently Amended) A The method ~~according to~~ of claim 1, in which the individual ingredients of the foaming composition are ~~metered~~ dispensed in individual aqueous form into water and are converted to foam.
3. (Currently Amended) A The method ~~according to~~ of claim 1 ~~or claim 2, in which~~ wherein the foaming agent is at least one of ~~selected from~~ anionic ~~and~~ or nonionic surfactants.
4. (Currently Amended) A The method ~~according to~~ of claim 1, in which the composition is supplied as a concentrate, which is diluted with water ~~in situ~~ in situ, to provide the foaming composition.
5. (Currently Amended) A wear-reducing foamable liquid concentrate, consisting of at least one lubricant selected from high molecular weight polyethylene oxide and bentonite and at least one foaming agent which ~~gives rise to~~ provides short-lived foams, optionally also containing at least one of a sequestering agent ~~and at least one~~ or foam booster, ~~the quantities present being respectively~~ wherein the amounts are as follows:

(a) in the case of polyethylene oxide as lubricant:

0.1-3% polyethylene oxide;

2-40% foaming agent;
up to 5% sequestering agent; and
up to ~~[[1]]~~ 10% foam booster;

and (b) in the case of bentonite as the lubricant:

2-30% bentonite; and
2-40% foaming agent;

by weight of liquid composition, the remainder being water.

6. (Currently Amended) A wear-reducing foamed liquid consisting of ~~[[a]]~~ the wear-reducing foamable liquid concentrate ~~according to~~ of claim ~~[[8]]~~ 5 diluted in ~~from~~ about 1 ~~[[-]]~~ to about 20 volumes of water and foamed to ~~give~~ provide a volume expansion of from about 5 ~~[[-]]~~ to about 40 times the volume of the unfoamed material.
7. (New) The method of claim 2 wherein the foaming agent is at least one of anionic or nonionic surfactants.
8. (New) The method of claim 4 wherein the foaming agent is at least one of anionic or nonionic surfactants.
9. (New) The method of claim 3 wherein if present the nonionic surfactant is at least one of alkanolamides, aminoxides, ethoxylated alcohols, ethoxylated alkylphenols, ethoxylated esters, glucose esters, sucrose esters or derivatives thereof.
10. (New) The method of claim 7 wherein if present the nonionic surfactant is at least one of alkanolamides, aminoxides, ethoxylated alcohols, ethoxylated alkylphenols, ethoxylated esters, glucose esters, sucrose esters or derivatives thereof.
11. (New) The method of claim 8 wherein if present the nonionic surfactant is at least one of alkanolamides, aminoxides, ethoxylated alcohols, ethoxylated alkylphenols, ethoxylated esters, glucose esters, sucrose esters or derivatives thereof.

12. (New) The wear-reducing foamable liquid concentrate of claim 5 wherein the foaming agent is at least one of anionic or nonionic surfactants.
13. (New) The wear-reducing foamable liquid concentrate of claim 12 wherein if present the nonionic surfactant is at least one of alkanolamides, aminoxides, ethoxylated alcohols, ethoxylated alkylphenols, ethoxylated esters, glucose esters, sucrose esters or derivatives thereof.
14. (New) The wear-reducing foamable liquid concentrate of claim 5 wherein if present the polyethylene oxide has a weight average molecular weight of at least 1,000,000.
15. (New) A wear-reducing foamable liquid concentrate, comprising at least one lubricant selected from high molecular weight polyethylene oxide and bentonite and at least one foaming agent which provides short-lived foams, optionally also comprising at least one of a sequestering agent or foam booster, wherein the amounts are as follows:

(a) in the case of polyethylene oxide as lubricant:

0.4-2 % polyethylene oxide;
2-40% foaming agent;
up to 5% sequestering agent; and
up to 10% foam booster;

and (b) in the case of bentonite as the lubricant:

2-25% bentonite; and
2-40% foaming agent;

by weight of liquid composition, the remainder being water.

16. (New) A wear-reducing foamed liquid comprising the wear-reducing foamable liquid concentrate of claim 15 diluted in about 1 to about 20 volumes of water and

foamed to provide a volume expansion of from about 5 to about 40 times the volume of the unfoamed material.

17. (New) The wear-reducing foamable liquid concentrate of claim 15 wherein the foaming agent is at least one of anionic or nonionic surfactants.
18. (New) The wear-reducing foamable liquid concentrate of claim 17 wherein if present the nonionic surfactant is at least one of alkanolamides, aminoxides, ethoxylated alcohols, ethoxylated alkylphenols, ethoxylated esters, glucose esters, sucrose esters or derivatives thereof.
19. (New) The wear-reducing foamable liquid concentrate of claim 15 wherein if present the polyethylene oxide has a weight average molecular weight of at least 1,000,000.
20. (New) The method of claim 4 wherein said concentrate is added in an amount of about 0.5 to about 10 kg/m³ of rock removed.